CAN Adaptor Box

Brief instruction manual

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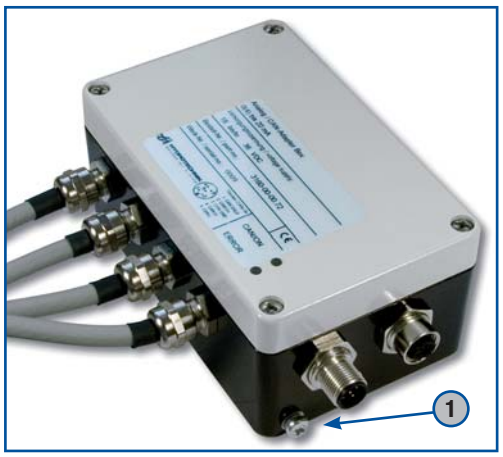

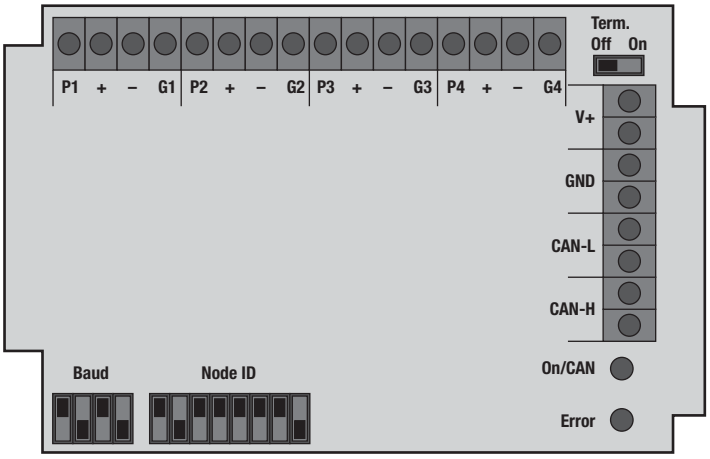

Important hints

The brief instruction manual on hand contains the most important information to install the CAN adaptor box and put it into operation. You should download the complete user manual from www.hydrotechnik.com in any way. Please obtain all rules and regulations regarding safety and accident prevention during executing the measures described here.

Protective conductor

Connect the protective conductor to the ground connector positioned outside the housing (see Pos. 1 in the picture), to avoid possible EMC problems.

The protective conductor may not come into the adaptor box!

Addressing

Set an ID using the micro switches in the section „Node-ID“. The ID results from the values of all micro switches in „ON“ position (= switch in upper position). An unique ID must be assigned to each element of a CAN string, two elements with the same ID are not allowed.

At the CAN adaptor box you can use the range from 1 to 127 (= 01h to 7Fh) for IDs. In the drawing, the micro switches are set like shown in the table:

Switch	1	2	3	4	5	6	7	8
Valency	2^0	2^1	2^2	2^3	2^4	2^5	2^6	–
Value	1	2	4	8	16	32	64	–
Switch in the example	ON	OFF	ON	ON	ON	ON	ON	OFF

The ID of the box is calculated with the sum of the values of all switches in „ON“ position. Here: 1 + 4 + 8 + 16 +32 + 64 = 125. Switch 8 has a different occupation that is explained in the operation manual.

Transfer rate

Set the box to the desired transfer rate. You can put the four micro switches in the section „Baudrate“ either to „1“ (switch up) or „0“ (switch down). The table contains the possible transfer rates and the required switch positions.

In the drawing, a transfer rate of 125 kBaud is set.

Transfer rate [kBaud]	1	2	3	4
1.000	1	0	0	1
800	0	0	0	1
500	1	1	1	0
250	0	1	1	0
125	1	0	1	0
100	0	0	1	0
50	1	1	0	0
20	0	1	0	0
10	1	0	0	0

Termination

When using several adaptor boxes in a CAN string, the last box must be terminated to avoid communication problems. Put the micro switch „Term.“ from „Off“ to „On“ to terminate an adaptor box. In the drawing, the termination is switched off, the CAN string is not terminated. *We recommend to activate the termination even when using a single adaptor box.*

Connection of the signal wires

The adaptor boxes are delivered completely wired, sensors and CAN wires can be connected immediately. When using adaptor boxes for thermal elements, you can receive a wiring diagram from your Hydrotechnik partner.

Hints for the use with Hydrotechnik measuring instruments

In the measuring instrument you have to program a different identifier like set at the adaptor box. Add the value 384 to the identifier of the box. Enter the sum (here: 384 + 125 = 509) as identifier in the measuring instrument.

According to the CANopen protocol specifications, the box switches into the „pre-operational mode“ after being switched on. The box must be activated with a CAN command before measured values can be transmitted. This is not possible with the MultiSystem 8050, therefor you have to use self-transmitting variants of the adaptor box.

CAN adaptor box	**Name**	**Can be used with**	**Self-transmitting**
3160-00-00.72	CAN Box analog	MultiSystem 5060	no
3160-00-00.74	CAN Box analog	MultiSystem 8050	yes
3160-00-00.73	CAN Box Thermo	MultiSystem 5060	no
3160-00-00.75	CAN Box Thermo	MultiSystem 8050	yes

Settings at the measuring instruments

CAN Box Thermo	**MultiSystem 5060** (CAN menu)	**MultiSystem 8050** (CAN menu)
Specification	CAN 2.0A	CAN 2.0A (11 Bit)
Timeout	1	
Identifier (example)	509 (decimal)	
Format	Binary byte	Binary
Offset	0 (Channel 1), 2 (Ch2), 4 (Ch3), 6 (Ch4)	
No of data bytes	2	
Sequence	Little Endian	
Filter	no	
Command	0	
Index	0	
Calculation	reference list	
CAN value	-1800 ... 12000 for type K	
Measured value	-180 ... 1200	
Value type	signed	
CAN Box Analog	only settings are shown that differ from those above	
CAN value	0 ... 20000	
Measured value	0 ... 600 (example)	
Device menu	**MultiSystem 5060**	**MultiSystem 8050**
CAN activation	CAN active	activate CAN bus
Baud rate	like set at the adaptor box	
Acticate box(from pre-oper. mode)	F3 (Setup) – CANopen device – F3 (Start) – OK – OK	not possible
Activate power supply	Power CAN: ON or external supply, then Power-CAN: OFF	not possible, external power supply required